Nutrition
Nutrition:
- Nutrient are organic substances found in food and are required for body function
- No one food provide all essential nutrient

Major function of nutrition:
- providing energy for body process and movement.
- providing structural material for body tissue.
- regulating body process.
Essential nutrition

- **Water.**
- **Carbohydrate.**
- **Protein.**
- **Lipids.**
- **Micronutrients.**
- **Minerals.**
Type of carbohydrate:-
1. Sugar: - the simplest of all carbohydrate
   - Water soluble
   - produce naturally in plant and animal
   - Monosaccharide, disaccharide.
2. Starches: - the insoluble, no sweet form of carbohydrate
   - Polysaccharide
   - derived from plants.
   - cannot be digested by human.
   - supplies roughage or bulk to the diet
Natural sources of carbohydrate supply vital nutrients, such as protein, vitamins, and minerals that are not found in processed food.

Carbohydrate metabolism is a major source of body energy.

Carbohydrates are storage as glycogen or as a fat.
Protein

- are organic substances composed of amino acid
- **Essential amino acid:** are those that cannot be manufactured in the body and must be supplied as a part of portion ingested in the diet
- **Non essential amino acid:** are those that the body can manufacture
- **Complete protein:** contain all of the essential amino acid plus many non essential ones, most animal proteins are complete proteins
- **Partially complete protein**: animal protein has less than the required amount of one or more essential amino acid,

- **Incomplete protein**: lack one or more essential amino acid, are usually derived from vegetable

- **Complimentary protein** combination of two or more vegetable

**Protein metabolism:**
- anabolism: building tissue
- Catabolism: breaking down tissue
- Nitrogen balance: nitrogen is the element that distinguish protein from the lipids
Lipids:

- It is organic substances that are greasy and insoluble in water but soluble in alcohol or ether.
- Fat are lipid that is solid in room temperature.
- Oil: lipids that is liquid in room temperature.
- Cholesterol: is fatlike substances that is both produce by the body and found in food of animal organ.
- The end product of lipid digestion are glycerol, fatty acids and cholesterol.
Micronutrients

- A vitamin is an organic compound that are cannot manufactured by the body and is needed by small quantity.

- **Water soluble vitamin:**
  - Include C, B1, B2, B3, B6, B9, B12.
  - The body cannot store the water soluble vitamins so must get daily supply in the diet.
  - Can be affected by food processing, storage and preparation.

- **Fat soluble vitamin:**
  - Include A, D, E and K
  - The body can store these vitamins
  - Daily supply of fat soluble vitamin is not absolutely necessary
Minerals

- are found in organic compound, as inorganic compound and as free ions
- Calcium and phosphate makeup 80% of all minerals in the body
- **Macro minerals**: are those that people required daily in amount over 100 mg.
  include calcium, phosphate sodium, potassium, magnesium, sulfate, and chloride
- **Micro mineral**: are those that people required daily in amount less than 100 mg
  the include iron zinc magnesium iodine fluoride etc
Energy balance: is the relationship between the energy derived from the food and the energy used by the body.

The body obtains energy in the form of calories from carbohydrate, protein and fat and alcohol.

Body use energy for voluntary activity such as walking and taking, and for involuntary activity such as breathing and secreting enzyme.
**Energy intake:**
- Caloric value: the amount of energy that nutrient or food supply to the body

**Energy output:**
- Metabolism: refer to all biochemical and physiologic process by which the body grows and maintain itself.
- Basal metabolic rate: (BMR) is the rate at which the body metabolizes food to maintain the energy requirement of a person who is awake and at rest.
- Resting energy expenditure (REE) is the amount of energy required to maintain basic body function. The caloric required maintaining life
Ideal body weight (IBW) is the optimal weight recommended for optimal health.

Body mass index (BMI) is an indicator of changes in the body fat store and withers persons weight is appropriate for highest

\[
\text{BMI} = \frac{\text{Weight in kilogram}}{\text{(Height in meters)}^2}
\]
## Guide for BMI EVALUATION

<table>
<thead>
<tr>
<th>BMI Range</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LESS THAN 16</td>
<td>Malnourished</td>
</tr>
<tr>
<td>16-19</td>
<td>Under weight</td>
</tr>
<tr>
<td>20-25</td>
<td>normal</td>
</tr>
<tr>
<td>26-30</td>
<td>Over weight</td>
</tr>
<tr>
<td>31-40</td>
<td>Moderately to sever obese</td>
</tr>
<tr>
<td>MOR THAN 40</td>
<td>Morbidity obese</td>
</tr>
</tbody>
</table>
Factor affecting nutrition

- Development: infancy and adolescent increased the need for nutrient
- Gender
- Ethnicity and culture
- Beliefs about food
- Personal preference
- Religion bracts
- Lifestyle
- Medication thereby
- Health
- Alcohol consumption
- Advertising
- Psychological factor
Vegetarian diet:

- that those use only plant foods and those that include milk, eggs, or dairy product.
- Because the protein found in plant incomplete, vegetarian must eat complementary protein food to obtain all the essential amino acid.
- A plant protein can be completed combining it with deferent plant protein.
Altered in nutrition

- **Malnutrition**: is commonly defined as the lack of necessary appropriate food substances but in practice includes both under nutrition and over nutrition.

- **Protein calorie malnutrition (PCM)**
  Once associated with the manifestation of malnutrition seen in starving children of third world counts characteristic are depressed visceral protein (e.g. albumin) weight loss and visible muscle and fat wasting.
- **Over nutrition**: caloric intake in excess of daily energy requirement resulting in storage energy in the form of adipose tissue.

- **Under nutrition**: refers to an intake of nutrient insufficient to daily energy requirement because inadequate intake or improper digestion and absorption of food.

- Anorexia (loss of appetite), nausea and vomiting lead to under nutrition.
Nursing management

Assessing
- Nutritional screening
- Nursing history
- Physical examination
- Dietary history
- Anthropometric measurement
- Laboratory date

Diagnoses
- Imbalance nutrition: less than body requirement
- Imbalance nutrition: More than body requirement
- Activity intolerance
**Planning**
- Maintaining or restoring optimal nutrition
- Promote healthy nutritional status
- Prevent complication associated with malnutrition

**Implementation:**
- Assessing with special diet
- Modification for disease
- Stimulation the appetite
- Assessing client with meal
- Enteral nutrition: nasogastric tube, gastrostomy
- Parentral nutrition

**Evaluation**
New food pyramid

MyPyramid
STEPS TO A HEALTHIER YOU

MyPyramid.gov
Fruits
Thank you